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PCT/GB01/02537

PATENT COOPERATION TREATY

From the INTERNATIONAL BUREAU

PCT

NOTIFICATION OF THE RECORDING OF A CHANGE

(PCT Rule 92bis.1 and Administrative Instructions, Section 422)

To:

LICHTI, Heiner
P.O. Box 41 07 60
D-76207 Karlsruhe
ALLEMAGNE

Date of mailing (day/month/year)
26 février 2002 (26.02.02)

Applicant's or agent's file reference
CDK1874

IMPORTANT NOTIFICATION

International application No.
PCT/GB01/02537

International filing date (day/month/year)
12 juin 2001 (12.06.01)

1. The following indications appeared on record concerning:

☐ the applicant ☐ the inventor ☒ the agent ☐ the common representative

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2. The International Bureau hereby notifies the applicant that the following change has been recorded concerning:

☒ the person ☐ the name ☐ the address ☐ the nationality ☐ the residence

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3. Further observations, if necessary:

4. A copy of this notification has been sent to:

☒ the receiving Office
☐ the International Searching Authority
☒ the International Preliminary Examining Authority
☐ the designated Offices concerned
☒ the elected Offices concerned
☐ other:

The International Bureau of WIPO
34, chemin des Colombettes
1211 Geneva 20, Switzerland

Facsimile No.: (41-22) 740.14.35

Authorized officer
R. Raissi

Telephone No.: (41-22) 338.83.38

Form PCT/IB/306 (March 1994)

004686322

PATENT COOPERATION TREATY

From the INTERNATIONAL BUREAU

PCT

NOTIFICATION OF ELECTION

(PCT Rule 61.2)

To:

Commissioner
US Department of Commerce
United States Patent and Trademark
Office, PCT
2011 South Clark Place Room
CP2/5C24
Arlington, VA 22202
ETATS-UNIS D'AMERIQUE

in its capacity as elected Office

Date of mailing (day/month/year) 25 February 2002 (25.02.02)	
International application No. PCT/GB01/02537	**Applicant's or agent's file reference** CDK1874
International filing date (day/month/year) 12 June 2001 (12.06.01)	**Priority date** (day/month/year) 16 June 2000 (16.06.00)
Applicant DE-GOL, Gino, Daniel	

1. The designated Office is hereby notified of its election made:

   [X] in the demand filed with the International Preliminary Examining Authority on:

   29 January 2002 (29.01.02)

   [ ] in a notice effecting later election filed with the International Bureau on:

   _____

2. The election [ ] was

   [X] was not

   made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

The International Bureau of WIPO
34, chemin des Colombettes
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Facsimile No.: (41-22) 740.14.35

Authorized officer

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10/070394

REC'D 25 SEP 2002
WIPO PCT

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference	FOR FURTHER ACTION	See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)
19091.0/01		
International application No.	International filing date *(day/month/year)*	Priority date *(day/month/year)*
PCT/GB01/02537	12/06/2001	16/06/2000
International Patent Classification (IPC) or national classification and IPC A63G31/16		
Applicant ROBOCOASTER LIMITED et al.		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 4 sheets, including this cover sheet.

   ☒ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

   These annexes consist of a total of 1 sheets.

3. This report contains indications relating to the following items:

   - I ☒ Basis of the report
   - II ☐ Priority
   - III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
   - IV ☐ Lack of unity of invention
   - V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations suporting such statement
   - VI ☐ Certain documents cited
   - VII ☐ Certain defects in the international application
   - VIII ☐ Certain observations on the international application

Date of submission of the demand	Date of completion of this report
14/01/2002	23.09.2002
Name and mailing address of the international preliminary examining authority: European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d	Authorized officer Turmo Peruga, R

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/GB01/02537

I. Basis of the report

1. With regard to the **elements** of the international application *(Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17))*:
Description, pages:

1-10	as originally filed			
Claims, No.:				
2-69	as originally filed			
1	as received on	31/08/2002	with letter of	29/08/2002
Drawings, sheets:				
1/12-12/12	as originally filed			

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

   These elements were available or furnished to this Authority in the following language: , which is:

   - ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
   - ☐ the language of publication of the international application (under Rule 48.3(b)).
   - ☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

   - ☐ contained in the international application in written form.
   - ☐ filed together with the international application in computer readable form.
   - ☐ furnished subsequently to this Authority in written form.
   - ☐ furnished subsequently to this Authority in computer readable form.
   - ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
   - ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
- ☐ the claims, Nos.:
- ☐ the drawings, sheets:

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)):

   (Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes:	Claims 1-69
	No:	Claims
Inventive step (IS)	Yes:	Claims 1-69
	No:	Claims
Industrial applicability (IA)	Yes:	Claims 1-69
	No:	Claims

2. Citations and explanations
   see separate sheet

Re Item V

Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. The subject-matter of **claim 1** appears to be novel (Art. 33(2) PCT) and inventive (Art. 33(3) PCT).

   The document EP-A-0997175 (D1) is regarded as being the closest prior art to the subject-matter of claim 1, and shows:

   "an amusement ride comprising:
   an output member having an anthropomorphic robot arm adapted for six degrees of movement, and a passenger station in movable engagement with said output member".

   In document D1 the passenger station can be mechanically fixed on a stationary docking device which is located on the same level as the robot base, i.e. on the ground and within the motion envelope of the amusement ride. This motion simulator cannot use the entire motion envelope and dynamics of an anthropomorphic robot arm arrangement.

   The subject-matter of claim 1 therefore differs from this known amusement ride, in that an access platform is further provided, which is retracted to a first operating condition and, in use, is moved to engage with the passenger station.

   By the aforementioned retractable access platform, the amusement ride allows for an extended range of motion both spatially and dynamically (when the platform is retracted to a first operating condition) without adversely affecting safety considerations, in particular during passenger ingress and egress (when the platform engages the passenger station) and without limiting application flexibility. Such an access platform is not suggested by the available prior art documents.

2. **Claims 2-69** refer to preferred embodiments of the subject-matter of claim 1. Therefore, they also fulfil the requirements of Art. 33(2) and Art. 33(3) PCT.

3. The industrial applicability of **claims 1-69** is self-evident (Art. 33(4) PCT).

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29 August, 2002
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New claim 1

1. An amusement ride comprising:
an output member having an anthropomorphic robot arm adapted for six degrees of movement; and
a passenger station in movable engagement with said output member,
characterized by an access platform, which is retracted to a first operating condition and, in use, is moved to engage with the passenger station.

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(81) Designated States *(national)*: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW.

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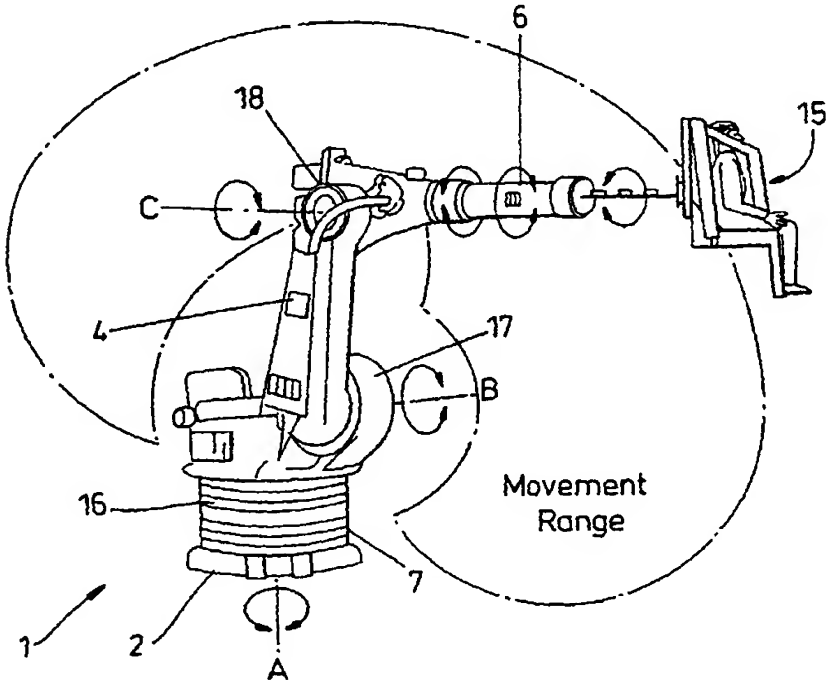
[Continued on next page]

(54) Title: RIDE APPARATUS



(57) Abstract: An amusement ride comprising an output member having an anthropomorphic robot arm adapted for six degrees of movement, said ride further comprising a passenger station in moveable engagement with said output member, a platform, and optionally a ticket reader.

WO 01/95989 A1

— *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

RIDE APPARATUS

This invention relates to ride apparatus and particularly (but not exclusively) to ride apparatus used in amusement parks and the like.

A variety of amusement rides is known for use in amusement parks. Such rides typically comprise dodgem, log flume, roller coaster and vertical drop rides. However, these rides are commonplace and there is an increasing demand for new, novel rides to maintain interest in said parks.

Accordingly, the present invention provides an amusement ride comprising an output member having an anthropomorphic robot arm adapted for six degrees of movement, said ride further comprising a passenger station in moveable engagement with said output member, a platform, and optionally a ticket reader.

The amusement ride is preferably supported on the ground. Alternatively, the amusement ride may be supported from a wall or from a ceiling.

More preferably, the ride may be mounted on a carousel. Alternatively, the ride may be mounted on a column. The column may be provided with means to cause vertical movement of the ride along a path parallel to the axis of the column. Alternatively, the ride may be mounted on a column which is in turn mounted on a carousel.

The passenger station preferably comprises one or more seats.

The passenger station preferably has means for audio-visual interaction. The audio-visual interaction may be respectively provided by speakers and a display means.

The visual and audio interaction may, separately or together, be synchronised with movements of the ride.

The audio and visual interaction data is stored on a data carrier. The data carrier may be a Mini Disc (MD), a CD-ROM, a magneto-optical device, a video tape, a hard drive, a Digital Versatile Disc (DVD) or other equivalent data carrier. The audio and visual interaction data may be stored on a combination of any two or more of the aforementioned data carriers.

Lighting effects may be used throughout the audio-visual interaction. The lighting effects may be synchronised with the ride. The lighting effects may comprise, for example, strobe, laser or disco light shows or any combination thereof.

The display means may be a plasma screen, a liquid crystal display, an active matrix Organic Light Emitting Diode (OLED) display, or a Light Emitting Polymer (LEP) display.

The visual interaction may alternatively be provided by a projector and screen.

The seats preferably comprise retaining means to retain a passenger when the ride is operable.

The retaining means may comprise a belt, for example, a safety belt or a pull down rigid harness or similar harness. Alternatively, the retaining means may comprise a cage.

The retaining means is preferably in operative engagement with a linear actuator.

The amusement ride may further comprise a weight sensor, said weight sensor providing a means to counter out of balance loads. Alternatively, the weight sensor provides a means to counter a maximum weight overload.

The amusement ride may further comprise a controller. The controller is preferably located in the passenger station. Alternatively, the controller is located at a passenger entrance to the ride.

The controller may be used to select a pre-programmed ride. Alternatively, the controller may be used to control the amusement ride independently of the pre-programmed ride.

The controller is preferably a joystick. Alternatively, the controller may be a steering wheel or a joypad.

The controller may further comprise one or more foot pedals.

The controller may comprise a combination of the aforementioned joystick and/or steering wheel and/or joypad and/or foot pedals.

The ticket reader can read a ticket, said ticket preferably being compatible with said ride. The ticket may be a card made of a plastics material. The ticket preferably has a code defining a pre-programmed ride. The code is preferably a bar code. Alternatively, the code may be contained in a microchip incorporated in the ticket.

The platform preferably comprises one or more steps, with a raised platform in operative engagement with said steps. The platform, in use, may suitably be adapted for pivotal movement about a substantially horizontal axis.

The platform is preferably raised and lowered about its axis by means of an actuator. The actuator may be hydraulically or pneumatically operated. The platform may be raised or lowered about its axis by a combination of hydraulic or pneumatic actuators.

Alternatively, the platform may be fixed and the amusement ride may be adapted to be lowered to a position which allows the ingress and egress of passengers respectively on to or off from the amusement ride.

In a further alternative the platform may be retracted into a stowage compartment and, in use, said platform is extended from the stowage compartment to engage with the ride in a lowered position.

The platform may be retracted and extended by means of one or more actuators. The actuators may be hydraulically or pneumatically operated, or a combination of hydraulic and pneumatic operation.

The platform preferably further comprises a safety barrier. The safety barrier, in use, may suitably be adapted for pivotal movement about a substantially vertical axis. Alternatively, the platform and safety barrier may each be adapted for pivotal movement about a substantially 45° axis (relative to the ground).

The safety barrier is preferably operated about its axis by means of an actuator. The actuator may be hydraulically or pneumatically operated.

The amusement ride preferably further comprises safety means. Preferably the safety means is controlled by a computer.

Preferably the safety means comprises actuators. The actuators may be electro-mechanically, hydraulically or pneumatically operated, or a combination of electro-mechanical, hydraulic and pneumatic operation.

The safety means preferably limits a G-force generated by the amusement ride.

The amusement ride may comprise more than one of said rides. Where two or more rides are employed they may be programmed to move synchronously. Alternatively, it may be programmed to move asynchronously.
Two or more rides may be used in a combat game.

The ride may be water-proofed for use in a "splash park".

The ride may comprise water cannons for use in a combat-type game in a splash park.

Preferred embodiments of the present invention will now be described, merely by way of example, with reference to the accompanying drawings.

Figure 1 shows an amusement ride output member in accordance with the present invention.

Figures 2A to 2F show the amusement ride of Figure 1 in operative condition during a ride.

Figures 3A and 3B show the amusement ride of Figure 1 in alternative mounted conditions.

Figure 4 shows two amusement rides of Figure 1 in a combat game.

Figures 5A to 5C show a passenger station in accordance with the present invention.

Figures 6A to 6C show a first procedure for vacating the amusement ride.

Figures 7A to 7C show a second procedure for vacating the amusement ride.

Figures 8A to 8C show a third procedure for vacating the amusement ride.

Figures 9A to 9C show the use of linear actuators or safety interlocks in the operation of a retaining means.

Figure 10 shows the ride operatively connected with other rides for synchronous movement.

Figures 11A to 11D show combinations of rides operatively connected in alternative arrangements.

Figures 12A and 12B show the ride adapted to be incorporated into a fairground ride, such as a carousel or vertical lift, or the like.

Figure 1 shows an amusement ride 1 comprising a base portion 2 supported on the ground and a trunnion 7 mounted on the base portion 2 to give rotation about a substantially vertical axis A. The trunnion 7 is in

operative engagement with a first elongate member 4, said elongate member being adapted to move about a substantially horizontal axis B, said elongate member being in operative engagement with a second elongate member 6 adapted to move about a substantially horizontal axis C parallel to axis B. The second elongate member has a further 3 degrees of movement about the axis of said second elongate member 6 and a passenger station 15 in moveable engagement with said member. The amusement ride movements about said axes are controlled by motors 16, 17 and 18.

Figures 2A to 2F illustrate the various conditions that the amusement ride 1 of Figure 1 may assume during a ride. The passenger station 15 is shown having two seats, 20 and 21.

Referring to Figures 3A and 3B, alternative mountings of the amusement ride are illustrated. The ride 1 may be supported from a wall 30 or a ceiling 40. The passenger station may also be configured so that arms and legs of a passenger are unsupported.

Figure 4 shows two amusement rides 1 in use in a combat game. The two rides are diametrically opposed to each other at a predetermined distance X. Said rides are each mounted on a fixed base or (as shown) on a base 50 in sliding engagement with a rail track 51, the bases and the tracks being parallel with each other. The passenger stations 15 are provided with a controller 52 and with optical (e.g. infra-red, photoelectric or laser) emitter and receiver assemblies 53, enabling the said passenger stations 15 to interact with each other. In a splash park, the optical emitter and receiver assemblies may be substituted with one or more water cannons.

The ride is enclosed by a reticulated fence 44 having a closure 60 (for ingress and egress of passengers) and a ticket machine 61 located adjacent the closure 60, for passengers to buy tickets for said ride.

The combat game is controlled by a computer 70. The computer 70 is integrated with the ticket machine 61 and with the two rides.

Figures 5A and 5B show the passenger station 15. The passenger station 15 is in movable engagement with the output member 80 of the ride. The passenger station 15 comprises a seat 81 with a weight sensor 90 located in the seat 81, a joystick controller 83 and a display means 82.

Figure 5C shows a passenger station 15 fitted with a pull down safety harness 84. The seat 81 is not contained in a capsule 85 (see Figure 5A).

Figures 6A to 6C illustrate an alighting procedure for the ride. The ride 1 is shown in a first operative condition 100, attained at the beginning or end of a ride. The robot then lowers to a second operative condition 101, where an optical emitter 200 and receiver 210 assembly, one of said emitter and receiver being located on the ride, ensure that the ride is in the correct alighting position. One or more optical emitter and receiver assemblies may be used to monitor the alighting procedure. One or more optical emitter and receiver assemblies may be used to monitor a ride throughout a ride sequence. Concomitantly a platform 102, activated by hydraulics, is raised from a first operative condition 103 to a second operative condition 104 under the ride 1 (which is in a second operative condition 101). The passengers may then leave/enter the ride. Alternatively, the platform 102 is fixed and the ride is located on a vertically moving pedestal 105 as shown in Figures 7A to 7C. The ride is in a first operative condition 100, attained at the beginning or at the end of a ride. The ride then lowers to an intermediate operative

condition 107. The pedestal 105 is lowered to a second operative condition 101 bringing the passenger into contact with the fixed platform 102. Again, the aforementioned optical emitter and receiver-assemblies may be used to monitor the alighting procedure. The passengers may then enter or leave the ride 1.

In a further alternative shown in Figures 8A to 8C the ride 1 is in a first operative condition 100, attained at the beginning or at the end of a ride. The robot then lowers to a second operative condition 101, where an optical emitter 200 and receiver 210 assembly, one of said emitter and receiver being located on said ride, to ensure that the ride is in the correct alighting position. One or more optical emitter and receiver assemblies may be used to monitor the alighting procedure. Concomitantly a platform 102 activated by hydraulics is extended from a first retracted condition 103 to a second operative condition 104 to engage with the ride 108. The engagement of the platform with the ride may facilitate part of a safety check for the above alighting procedure.

Upon leaving the ride the retaining means (e.g. a safety belt or cage) must be released. Figures 9A to 9C illustrate the use of shot bolt actuators 110 in releasing the retaining means. The shot bolt actuators can only be activated when the ride is in the aforementioned second operative condition 101. The shot bolt actuators 110 when activated release the retaining means 111, permitting the ingress and egress of passengers.

One or more amusement rides 1 of the present invention may be linked by a computer so as to move synchronously. The rides are controlled by a supervisor and control station 120, as illustrated in Figure 10. The amusement rides can also be programmed to move asynchronously to one

another. The rides may also be assembled in various combinations as illustrated in Figures 11A to 11D.

The base 2 of the amusement ride 1 of the present invention can be supported on a carousel 130, as illustrated in Figure 12A. One or more of said rides can be mounted onto the carousel. The carousel 130 may alternatively have an elongate centrally located column 131, from which one or more of said rides 1 may be supported, as illustrated in Figure 12B. The rides can then also rotate and move in a vertical plane simultaneously.

CLAIMS

1. An amusement ride comprising an output member having an anthropomorphic robot arm adapted for six degrees of movement, said ride further comprising a passenger station in movable engagement with said output member, a platform, and optionally a ticket reader.

2. An amusement ride as claimed in Claim 1, in which said ride is supported on the ground.

3. An amusement ride as claimed in Claim 1, in which said ride is supported from a wall.

4. An amusement ride as claimed in Claim 1, in which said ride is supported from a ceiling.

5. An amusement ride as claimed in Claim 1, in which said ride is mounted on a carousel.

6. An amusement ride as claimed in Claim 1, in which said ride is mounted on a column.

7. An amusement ride as claimed in Claim 6, in which said column is provided with means to cause vertical movement of the ride along a path parallel to the axis of the column.

8. An amusement ride, as claimed in Claim 6 or 7, in which said column is mounted on a carousel.

9. An amusement ride as claimed in any one of Claims 1 to 8, in which the passenger station comprises one or more seats.

10. An amusement ride as claimed in any one of the preceding claims in which the passenger station has means for audio-visual interaction.

11. An amusement ride as claimed in Claim 10, in which the audio-visual interaction is respectively provided by speakers and a display means.

12. An amusement ride as claimed in Claim 11, in which the audio-visual interaction is synchronised with movements of the said ride.

13. An amusement ride as claimed in Claim 11 or Claim 12, in which the audio-visual interaction is stored on a data carrier.

14. An amusement ride as claimed in Claim 13, in which the data carrier is a Mini Disc, a CD-ROM, a magneto-optical device, a video tape, a hard drive, a Digital Versatile Disc (DVD) or equivalent data carrier.

15. An amusement ride as claimed in Claim 14, in which the audio-visual interaction is stored on a combination of any two or more of said data carriers.

16. An amusement ride as claimed in any one of the preceding claims, in which lighting effects are used throughout the ride.

17. An amusement ride as claimed in Claim 16, in which the lighting effects are synchronised with the ride.

18. An amusement ride as claimed in Claim 16, or Claim 17, in which the lighting effects comprise strobe, laser or disco light effects or any combination thereof.

19. An amusement ride as claimed in Claim 11, in which the display means comprises a plasma screen, a liquid crystal display (LCD), an active matrix Organic Light Emitting Diode display (OLED) or a Light Emitting Polymer (LEP) display.

20. An amusement ride as claimed in any one of Claims 9 to 19, in which the passenger station seats include a retaining means.

21. An amusement ride as claimed in Claim 20, in which the retaining means comprises a belt or similar harness.

22. An amusement ride as claimed in Claim 20, in which the retaining means comprises a pull down harness.

23. An amusement ride as claimed in any one of Claims 20 to 22, in which the retaining means is in operative engagement with a linear actuator.

24. An amusement ride as claimed in any one of the preceding claims, in which said ride further comprises a weight sensor.

25. An amusement ride as claimed in Claim 24, in which the weight sensor acts, in use, to counter out of balance loads.

26. An amusement ride as claimed in Claim 24, in which the weight sensor acts, in use, to counter a maximum weight overload.

27. An amusement ride as claimed in any one of the preceding claims, in which said ride further comprises a controller.

28. An amusement ride as claimed in Claim 27, in which the controller is located in the passenger station.

29. An amusement ride as claimed in Claim 27, in which the controller is located at a passenger entrance to the ride.

30. An amusement ride as claimed in Claim 27, 28 or 29, in which the controller is used to select a pre-programmed ride.

31. An amusement ride as claimed in Claim 27, 28 or 29, in which the controller is used to control said amusement ride independently of the pre-programmed ride.

32. An amusement ride as claimed in any one of Claims 27 to 31, in which the controller is a joystick.

33. An amusement ride as claimed in any one of Claims 27 to 31, in which the controller is a steering wheel.

34. An amusement ride as claimed in any one of Claims 27 to 31, in which the controller is a joypad.

35. An amusement ride as claimed in any one of Claims 27 to 34, in which the controller further comprises one or more foot pedals.

36. An amusement ride as claimed in any one of Claims 27 to 35, in which the controller comprises a combination of any one or more of the controllers as claimed in Claims 32 to 35.

37. An amusement ride as claimed in any one of Claims 1 to 36, in which the ticket reader can read a ticket, said ticket being compatible with said ride.

38. An amusement ride as claimed in Claim 37, in which the ticket is a card made from a plastics material.

39. An amusement ride as claimed in Claim 37 or 38, in which the ticket has a code defining a pre-programmed ride.

40. An amusement ride as claimed Claim 39, in which the ticket code is a bar code.

41. An amusement ride as claimed in Claim 39, in which the code is contained in a microchip incorporated in the ticket.

42. An amusement ride as claimed in any one of the preceding claims, in which said ride comprises one or more steps with a platform in operative engagement with said steps.

43. An amusement ride as claimed in Claim 42, in which the platform is adapted for pivotal movement about a substantially horizontal axis.

44. An amusement ride as claimed in Claim 42 or 43, in which the platform is raised and lowered about its axis by means of one or more actuators.

45. An amusement ride as claimed in Claim 44, in which the or each actuator is hydraulically or pneumatically operated.

46. An amusement ride as claimed in any one of Claims 42 to 45, in which the platform is raised or lowered about its axis by a combination of hydraulic and pneumatic actuators.

47. An amusement ride as claimed in any one of Claims 1 to 41, in which said ride comprises one or more steps in engagement with a fixed platform.

48. An amusement ride as claimed in any one of Claims 1 to 41, in which a platform is retracted into a stowage box and, in use, said platform is extended to engage with the ride.

49. An amusement ride as claimed in Claim 48, in which the platform is retracted and extended by means of one or more actuators.

50. An amusement ride as claimed in Claim 49, in which the or each actuator is hydraulically or pneumatically operated.

51. An amusement ride as claimed in any one of Claims 48 to 50, in which the platform is retracted and extended by means of a combination of hydraulic and pneumatic actuators.

52. An amusement ride as claimed in any one of Claims 42 to 51, in which the platform further comprises a safety barrier.

53. An amusement ride as claimed in Claim 52, in which the safety barrier is adapted for pivotal movement about a substantially vertical axis.

54. An amusement ride as claimed in Claim 42, and in any one of Claims 43 to 53, when dependent on Claim 42, in which the platform and

safety barrier are each adapted for pivotal movement about a substantially 45° axis.

55. An amusement ride as claimed in any one of the preceding claims in which said ride further comprises safety means.

56. An amusement ride as claimed in Claim 55, in which the safety means are controlled by a computer.

57. An amusement ride as claimed in Claim 55 or 56, in which the safety means comprises actuators.

58. An amusement ride as claimed in Claim 57, in which the actuators are electro-mechanically, hydraulically or pneumatically operated, or a combination of Electro-Mechanical, hydraulic and pneumatic operation.

59. An amusement ride as claimed in any one of Claims 55 to 58, in which the safety means limits a G-force generated by said ride.

60. An amusement ride as claimed in any one of the preceding claims, comprising more than one of said rides.

61. An amusement ride as claimed in Claim 60, in which two or more rides are programmed to move synchronously.

62. An amusement ride as claimed in Claim 61, in which two or more rides are programmed to move asynchronously.

63. An amusement ride as claimed in any one of the preceding claims, in which the ride is fitted with optical emitter and receiver assembles to monitor an alighting procedure.

64. An amusement ride as claimed in Claim 63, in which the ride is fitted with optical emitter and receiver assemblies to monitor said ride throughout a ride sequence.

65. An amusement ride as claimed in Claim 63 or 64, in which the optical emitter and receiver assemblies are selected from the group consisting of infra-red, photoelectric and laser emitter and receiver assemblies.

66. An amusement ride as claimed in any one of Claims 1 to 60, in which two or more rides are used in a combat game.

67. An amusement ride as claimed in Claim 66, in which the passenger stations of said rides are fitted with optical emitter and receiver assemblies as claimed in Claim 65.

68. An amusement ride as claimed in any one of the preceding claims, in which said ride is waterproofed for use in a splash park.

69. An amusement ride as claimed in Claim 68, in which the ride is used as a combat ride and the optical emitter and receiver assemblies are replaced by one or more water cannons.

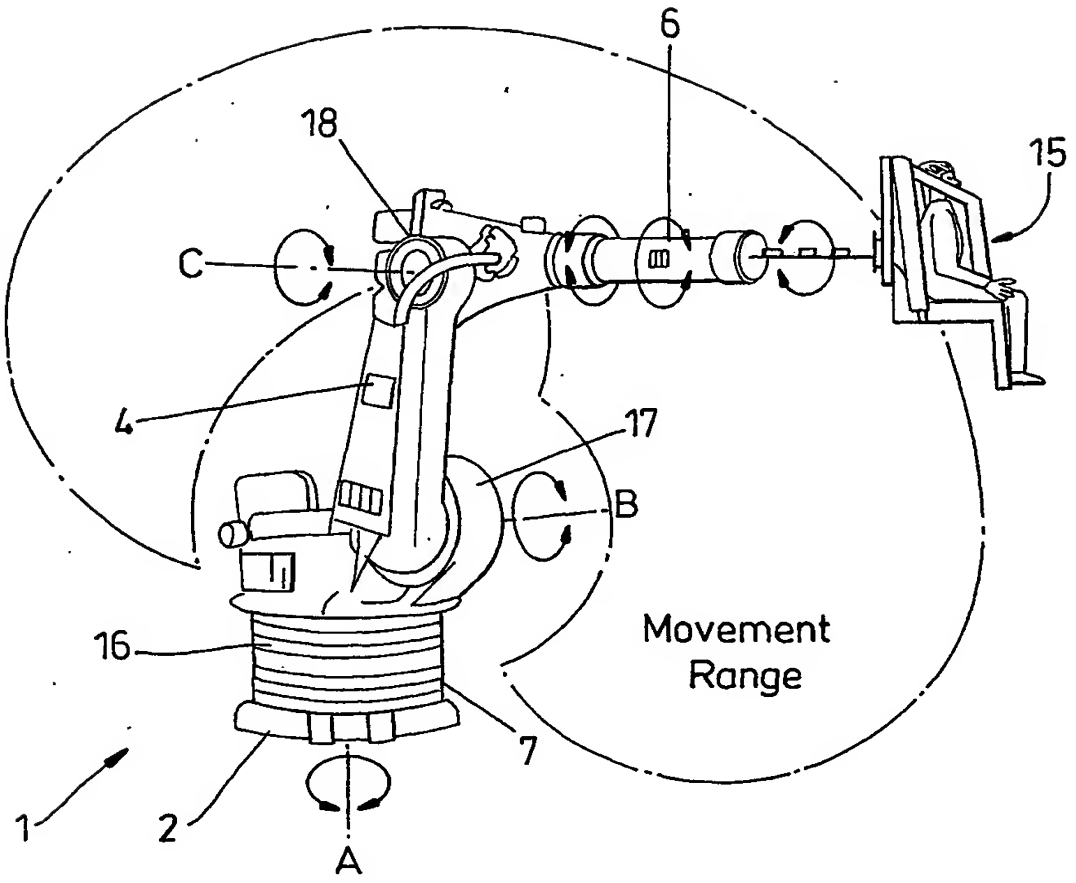


Fig. 1

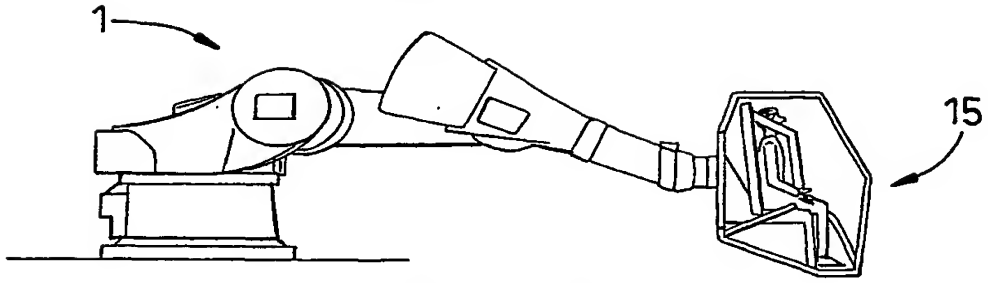


Fig. 2A

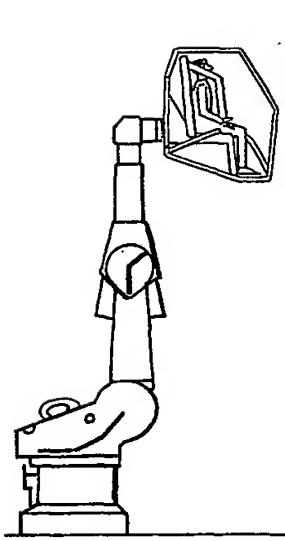


Fig. 2B

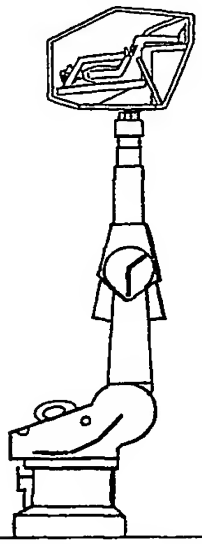


Fig. 2C

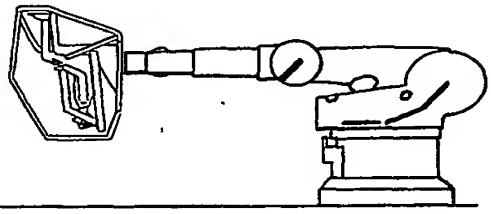


Fig. 2D

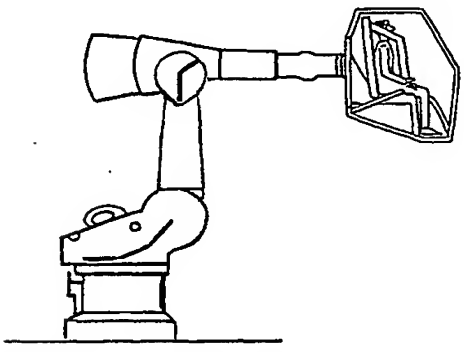


Fig. 2E

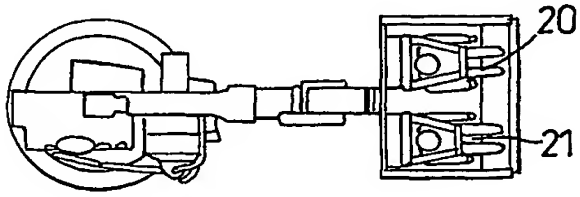


Fig. 2F

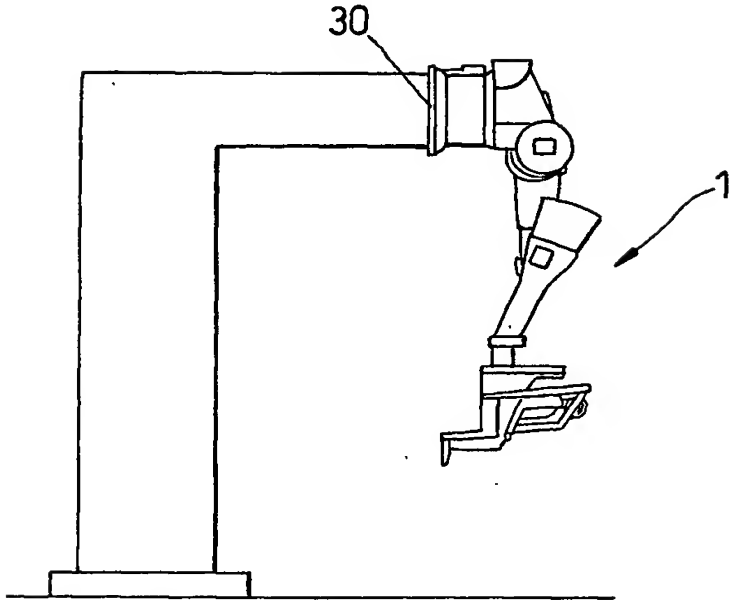


Fig. 3A

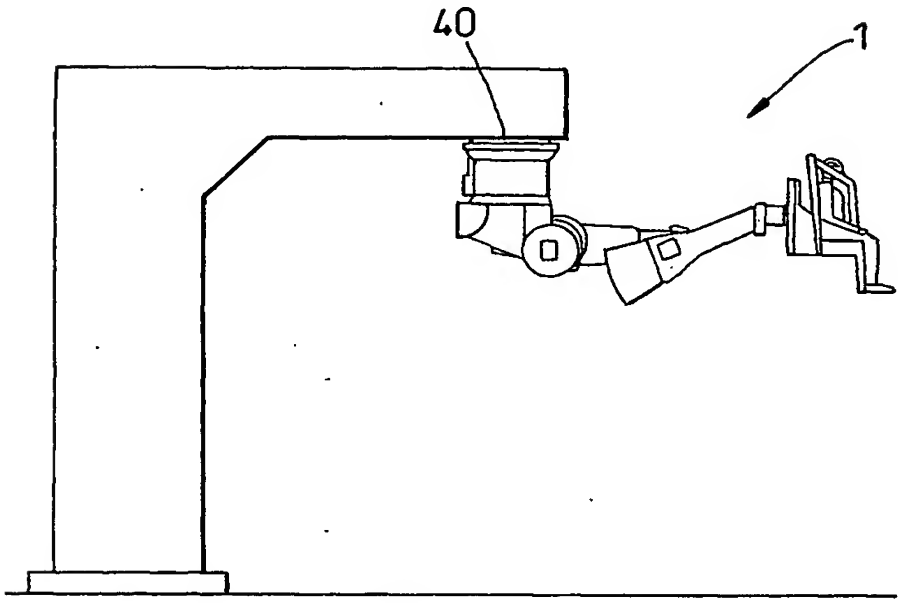


Fig. 3B

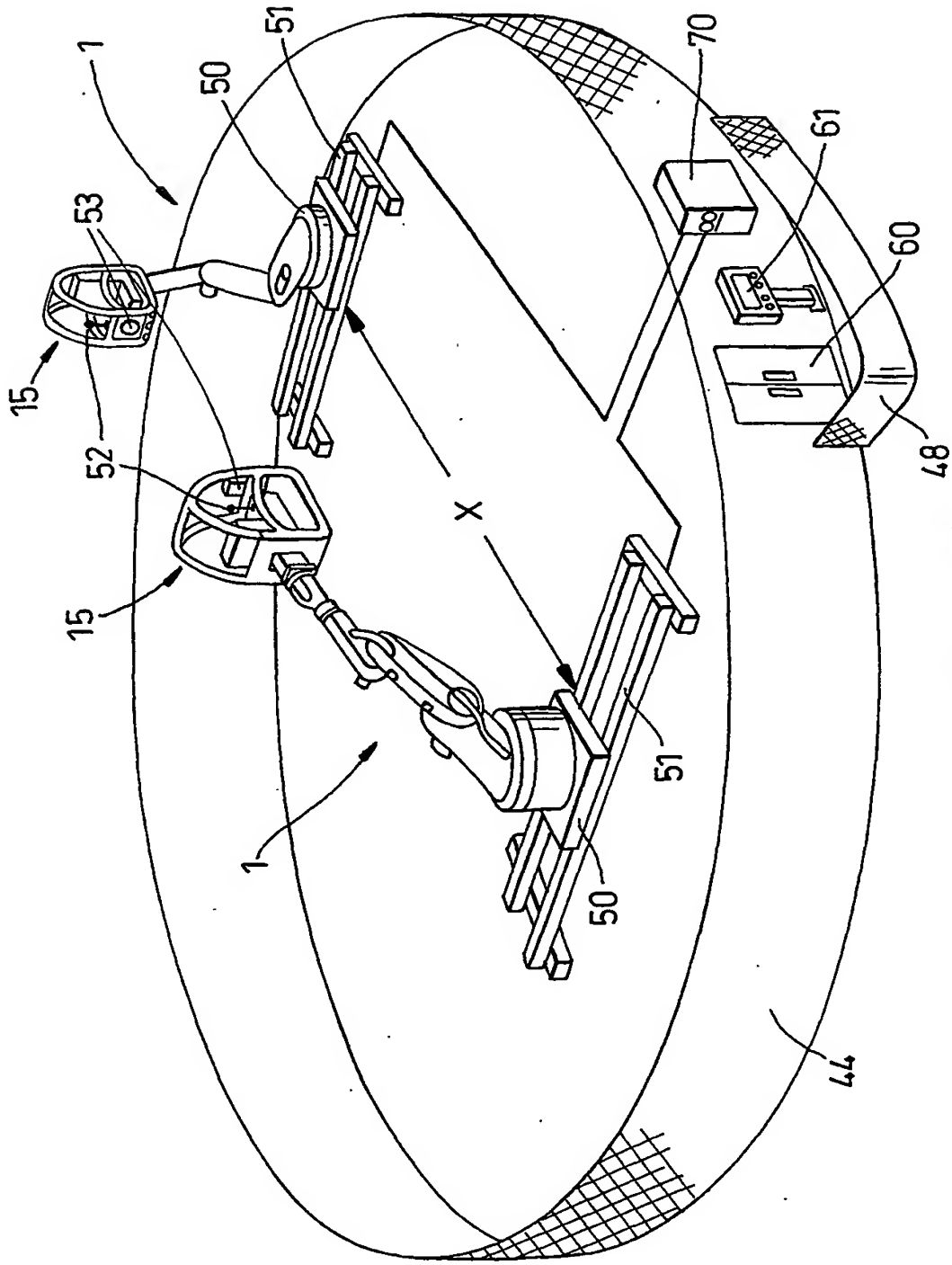


Fig. 4

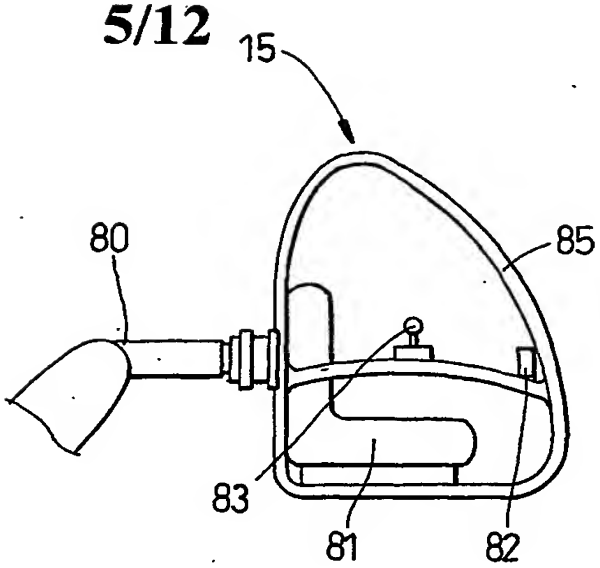


Fig. 5A

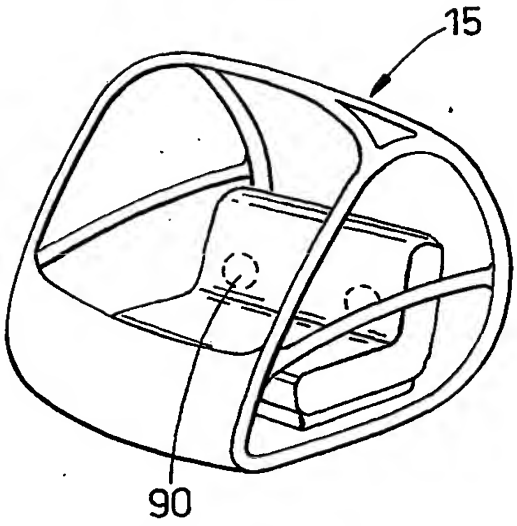


Fig. 5B

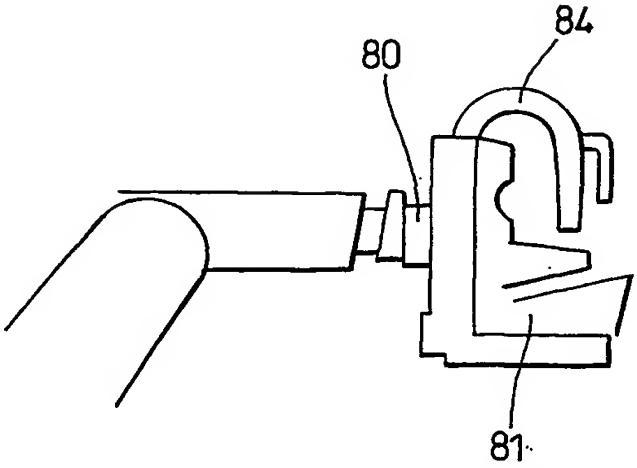


Fig. 5C

Fig. 6A

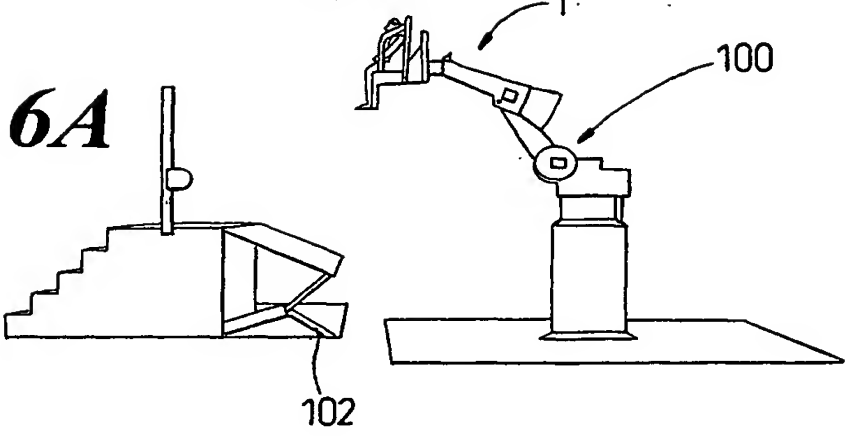


Fig. 6B

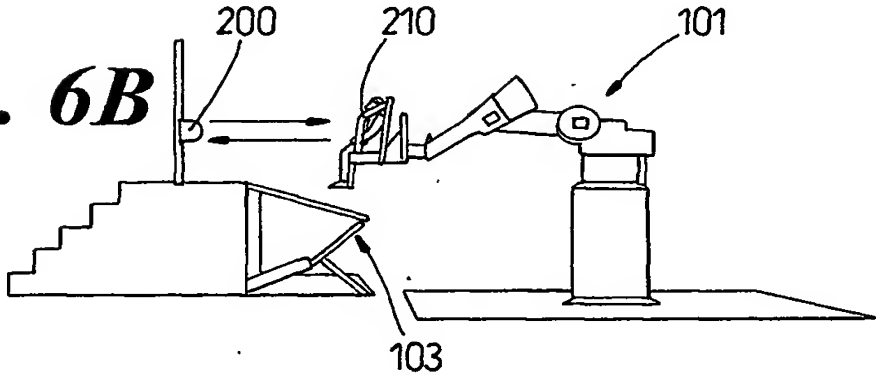
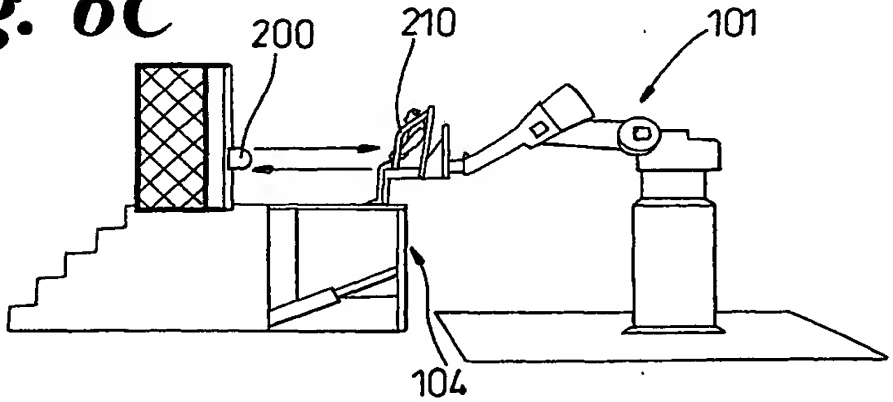


Fig. 6C



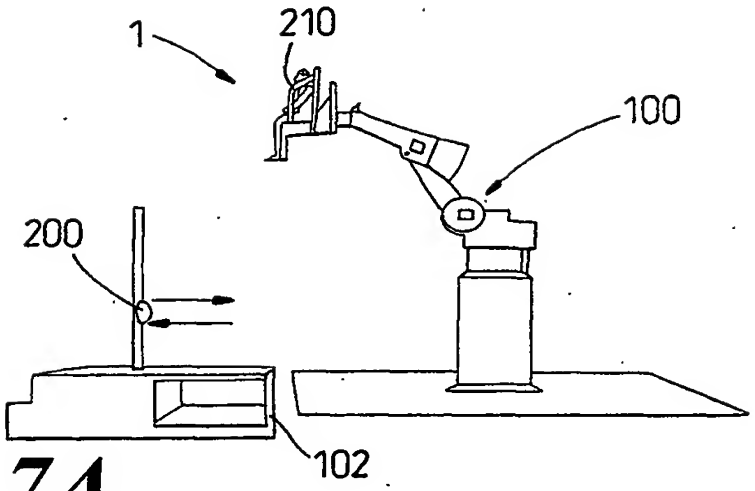


Fig. 7A

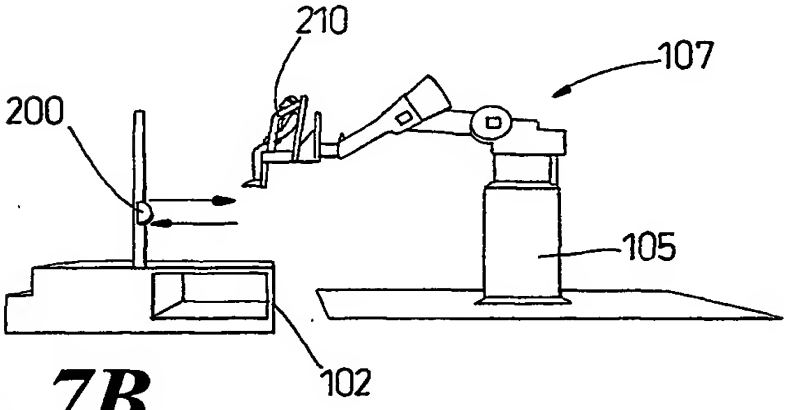


Fig. 7B

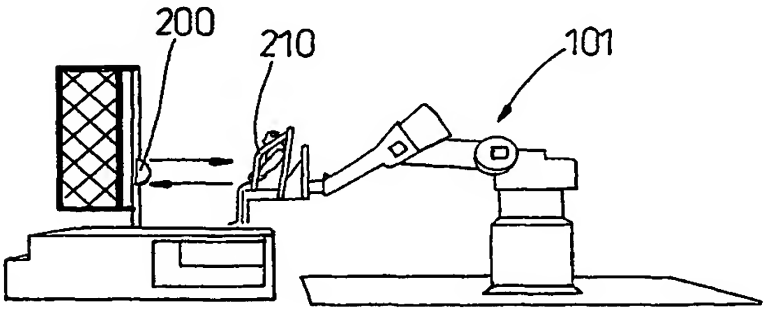


Fig. 7C

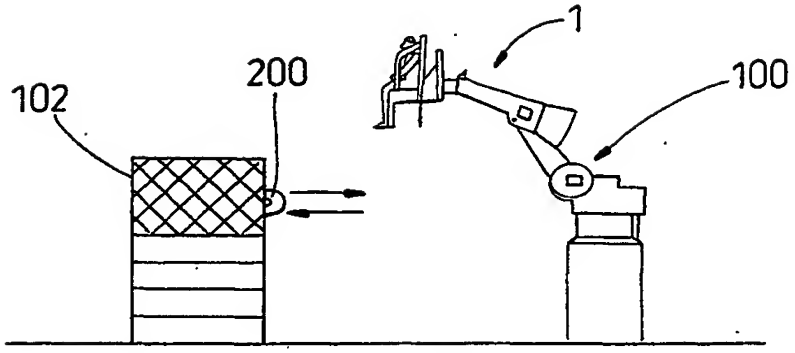


Fig. 8A

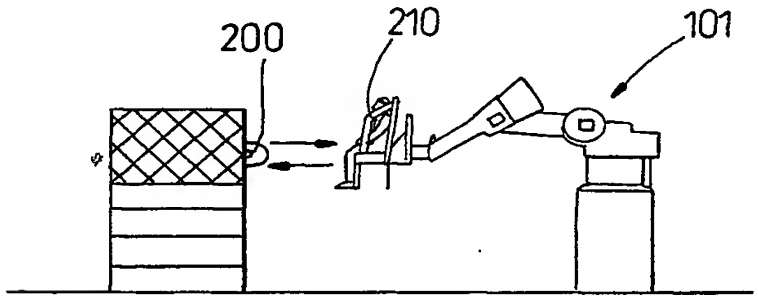


Fig. 8B

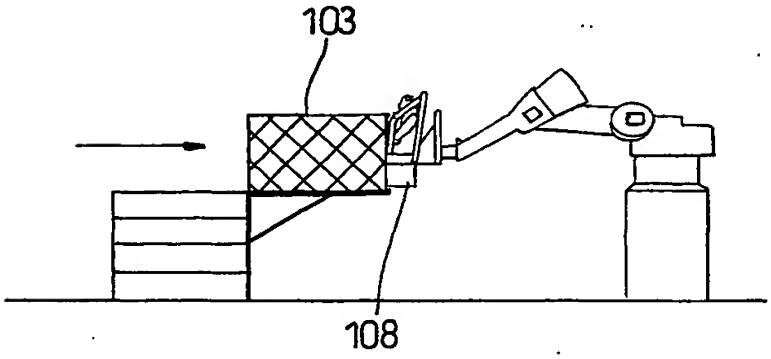


Fig. 8C

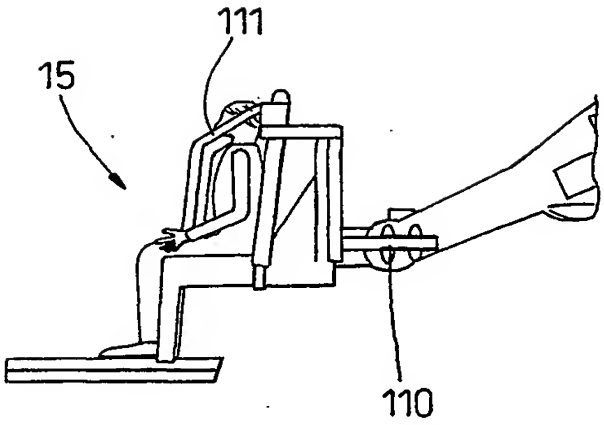


Fig. 9A

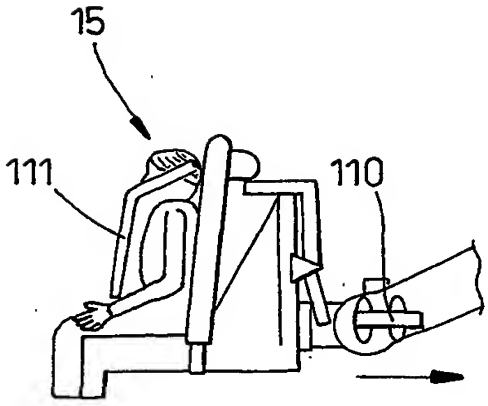


Fig. 9B

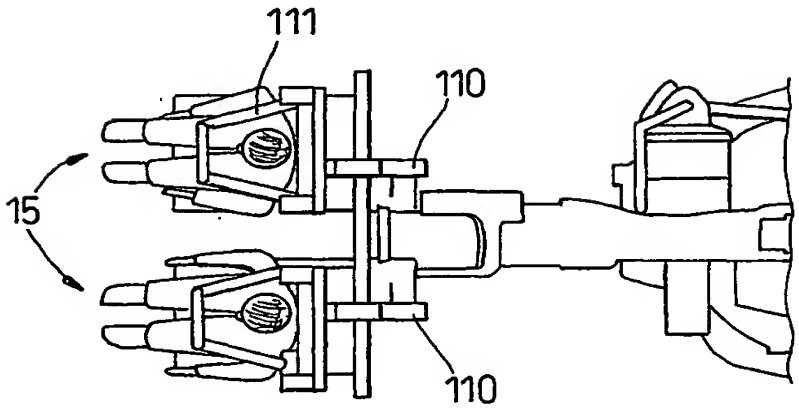


Fig. 9C

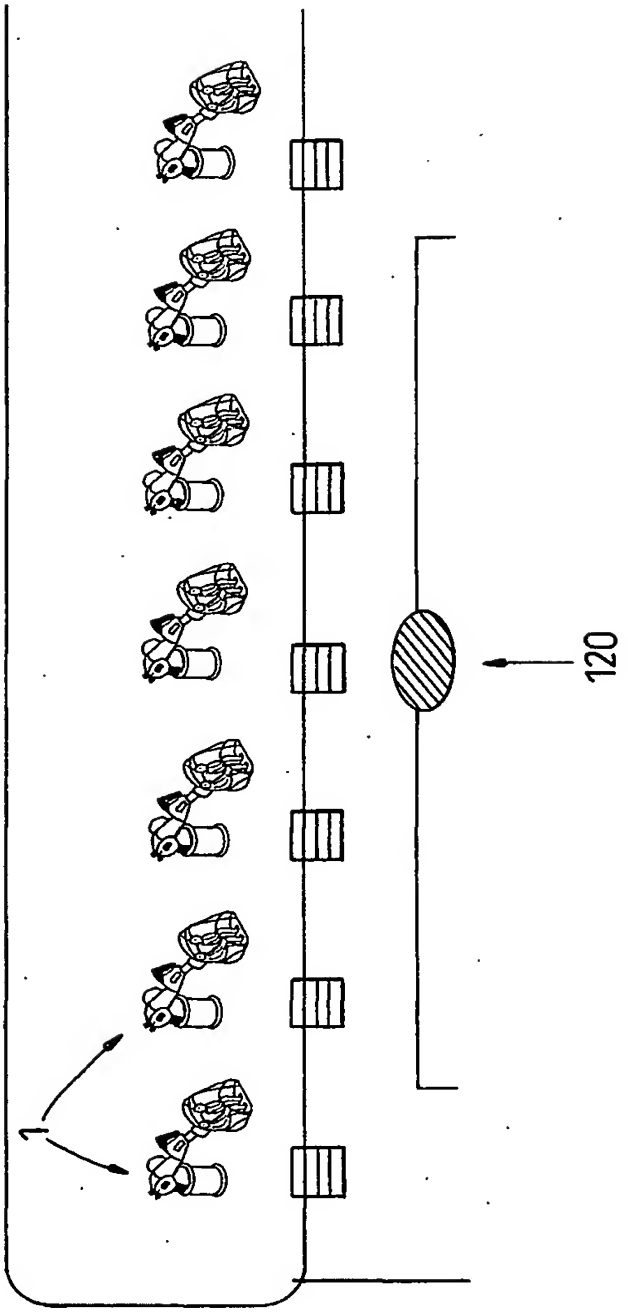


Fig. 10

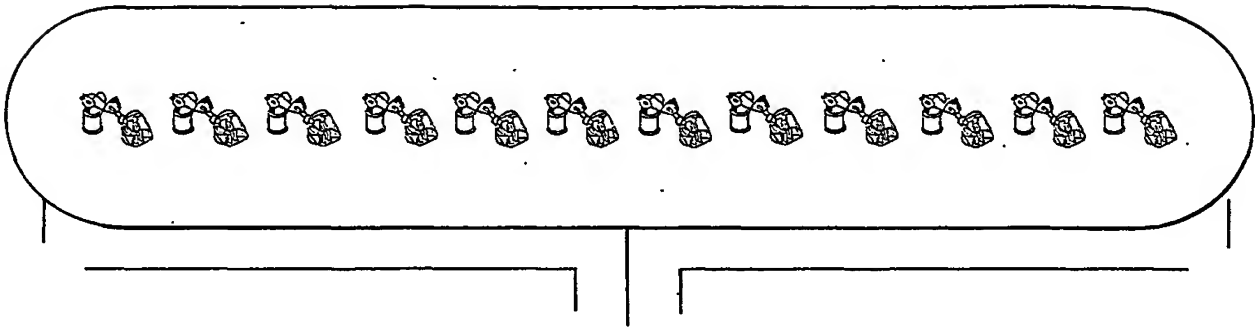


Fig. 11A

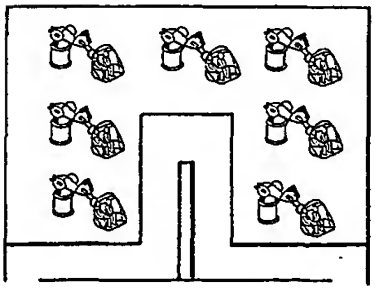


Fig. 11B

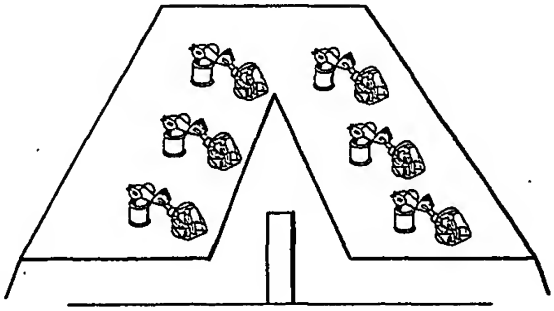


Fig. 11D

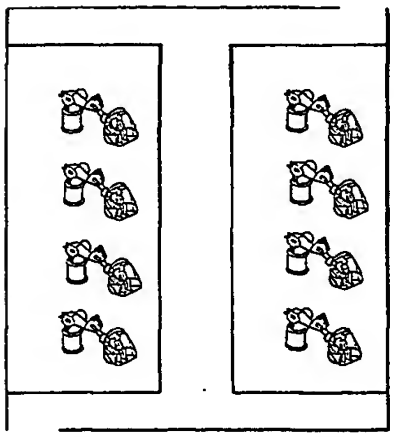


Fig. 11C

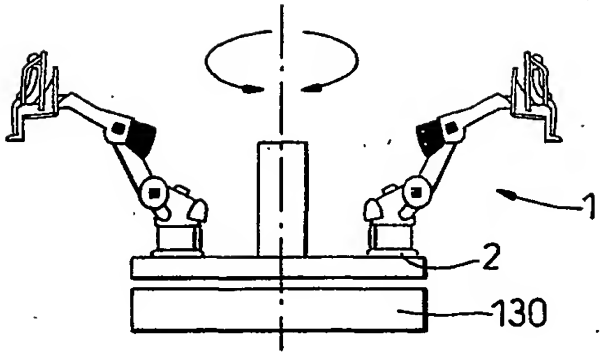


Fig. 12A

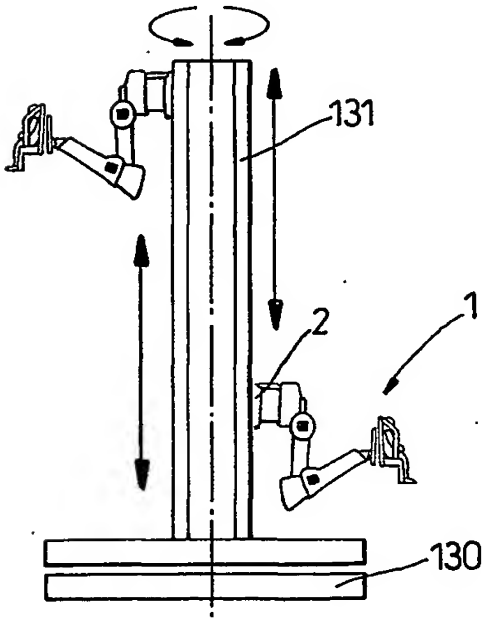


Fig. 12B

INTERNATIONAL SEARCH REPORT

International Application No
PCT/GB 01/02537

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 A63G31/16

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 A63G

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)
EPO-Internal, PAJ, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP 0 997 175 A (PERIPHERALS N V) 3 May 2000 (2000-05-03) the whole document ---	1,2, 9-13,24, 27,28, 32,36,60
X	EP 0 997 176 A (PERIPHERALS N V) 3 May 2000 (2000-05-03) the whole document ---	1,2, 9-13,24, 27,28, 32,36,60
X	DE 296 17 332 U (NIKOWITZ AXEL) 23 January 1997 (1997-01-23) the whole document --- -/--	1,6,7, 10,12-14

[X] Further documents are listed in the continuation of box C.

[X] Patent family members are listed in annex.

° Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
1 October 2001	09/10/2001

Name and mailing address of the ISA	Authorized officer
European Patent Office, P.B. 5818 Patentlaan 2 NL – 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016	Baert, F

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INTERNATIONAL SEARCH REPORT

International Application No
PCT/GB 01/02537

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	JP 05 158399 A (ORII:KK) 25 June 1993 (1993-06-25) abstract	1,2,10, 27
P,X	DE 199 00 442 A (HOLLE AXEL) 13 July 2000 (2000-07-13) the whole document	1-69
P,X	DE 199 00 528 A (HOLLE AXEL) 21 September 2000 (2000-09-21) the whole document	1-69

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INTERNATIONAL SEARCH REPORT

[redacted]mation on patent family members

[redacted]ternational Application No
PCT/GB 01/02537

Patent document cited in search report		Publication date	Patent family member(s)		Publication date
EP 0997175	A	03-05-2000	EP	0997175 A1	03-05-2000
			EP	0997176 A2	03-05-2000
EP 0997176	A	03-05-2000	EP	0997175 A1	03-05-2000
			EP	0997176 A2	03-05-2000
DE 29617332	U	23-01-1997	DE	29617332 U1	23-01-1997
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			DE	59703565 D1	21-06-2001
			WO	9815382 A1	16-04-1998
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DE 19900528	A	21-09-2000	DE	19900528 A1	21-09-2000

INTERNATIONAL SEARCH REPORT

International Application No
PCT/GB 01/02527

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 A47G29/20

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 A47G

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)
EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
E	EP 1 114 605 A (AARUM ET AL.) 11 July 2001 (2001-07-11) claims 1,7,8; figure	1-3,5, 9-11,15, 16
X	DE 198 03 707 A (FRAUNHOFER-GESELLSCHAFT ZUR FÖRDERUNG DER ANGEWANDTEN FORSCHUNG E.V.) 5 August 1999 (1999-08-05) claims 5-7; figures 1,2	1-4, 9-11,13, 16
X	WO 87 06298 A (MCSWEENEY) 22 October 1987 (1987-10-22) claims 5,6; figure 4	1,3-5,9, 10,15,16
X	GB 2 340 479 A (BUTLER BOXES LIMITED) 23 February 2000 (2000-02-23) page 6, line 28; claim 11; figures	1,3,4,9, 13-16

-/--

[X] Further documents are listed in the continuation of box C.

[X] Patent family members are listed in annex.

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"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
16 October 2001	24/10/2001

Name and mailing address of the ISA	Authorized officer
European Patent Office, P.B. 5818 Patentlaan 2 NL – 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016	Beugeling, G.L.H.

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Form PCT/ISA/210 (second sheet) (July 1992)

INTERNATIONAL SEARCH REPORT

International Application No
PCT/GB 01/02527

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication,where appropriate, of the relevant passages	Relevant to claim No.
A	WO 00 32480 A (PORTER) 8 June 2000 (2000-06-08) page 3, line 26 - line 29; claims 7,8	1,5-7

1

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No
PCT/GB 01/02527

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
EP 1114605 A	11-07-2001	EP 1114605 A1	11-07-2001
DE 19803707 A	05-08-1999	DE 19803707 A1	05-08-1999
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		WO 0032480 A2	08-06-2000

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference	FOR FURTHER ACTION	see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.
CDK1874		
International application No.	International filing date *(day/month/year)*	(Earliest) Priority Date *(day/month/year)*
PCT/GB 01/02537	12/06/2001	16/06/2000
Applicant		
ROBOCOASTER LIMITED et al.		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 3 sheets.

[X] It is also accompanied by a copy of each prior art document cited in this report.

1. **Basis of the report**

   a. With regard to the **language,** the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

   [ ] the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

   b. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international search was carried out on the basis of the sequence listing :

   [ ] contained in the international application in written form.

   [ ] filed together with the international application in computer readable form.

   [ ] furnished subsequently to this Authority in written form.

   [ ] furnished subsequently to this Authority in computer readble form.

   [ ] the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

   [ ] the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished

2. [ ] **Certain claims were found unsearchable** (See Box I).

3. [ ] **Unity of invention is lacking** (see Box II).

4. With regard to the **title,**

   [X] the text is approved as submitted by the applicant.

   [ ] the text has been established by this Authority to read as follows:

5. With regard to the **abstract,**

   [X] the text is approved as submitted by the applicant.

   [ ] the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. The figure of the **drawings** to be published with the abstract is Figure No. 1

   [X] as suggested by the applicant.

   [ ] because the applicant failed to suggest a figure.

   [ ] because this figure better characterizes the invention.

   [ ] None of the figures.